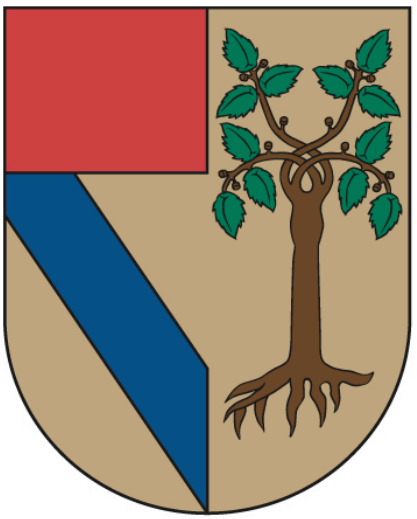

UNIVERSIDAD
PANAMERICANA

# Simulation & Visualization


**Students:**
Mario Alejandro Rodríguez González
Francisco Diaz de Leon Borunda
Oscar Duran
Alberto Morales

**Professor:**
Dr.Gabriel Castillo Cortés

## Development Log

- Challenge using Firebase as online DB. Firestore only permits a limited number of indexes, and when production was run for many days, data could not be saved in its totality. Also, for a high number of products, the limit was reached so we ended up deciding to leave product stats out of the DB and we had to decide to just leave in the DB the specific data that we planned to show in the dashboard.

- Another challenge we faced was working with dates. For saving the dates of the simulation we used a format ‘dd/mm/yyyy’, this caused some challenges later on the visualization because dates were used in a different format and we had to format the date in different ways to be able to use them properly.

## How to run:

- Manufacturing.py: Download file together with the db cred certificate. Run the py program and wait until it finishes executing.
- Once executed the py program, continue with the web app:

Running Your Ionic App Downloaded from GitHub
Prerequisites:
Node.js and npm (or yarn): They can be downloaded from https://nodejs.org/en.
Code Editor: Any text editor like Visual Studio Code
Instructions:
Clone the Repository:
Open a terminal or command prompt.
Navigate to the directory where you want to clone the repository.
Use the git clone command followed by the URL of your GitHub repository. For example:
git clone https://github.com/your-username/your-ionic-app-repo.git
Install Dependencies:
Navigate to the cloned project directory using cd:
cd your-ionic-app-repo
Install the project's dependencies using npm
npm install
Run the App in the Browser :

Start the development server using:
ionic serve
This will launch a local server and open your app in a web browser (usually at http://localhost:8100).

## Design Document

- For the design architecture, as a team we decided to simulate a range of days in the python factory simulator, after that save most representative statistics in JSON format and then connect to an online db in Firebase to save the result JSON.

- Once with the statistics in the DB, we decided to create a web page using Angular so we could connect and retrieve the data from the DB and create the graphs to display this data using an angular library called ngx-charts.